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HOW TO WRITE A WORLD CLASS PAPER

TIPS, TRAPS AND TRAVESTIES

Tim Finin, Editor in Chief of the journal of web semantics

Sweitze Roffel, Elsevier Publisher

Elsevier Author Workshop
Nov 10th, 2010.
Shanghai, China



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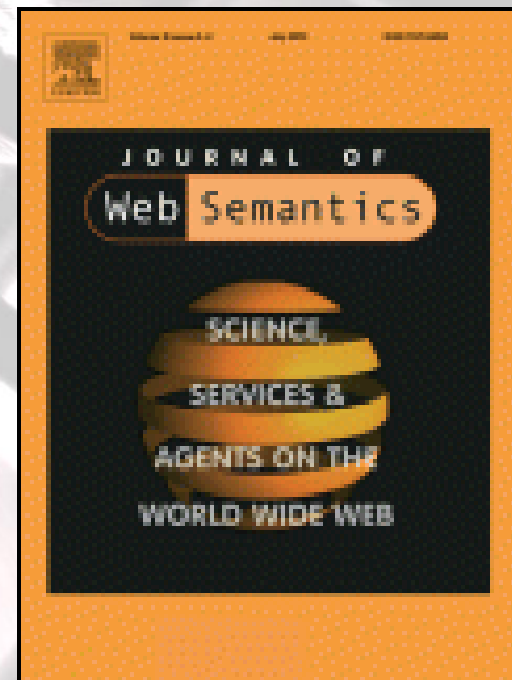
Outline

- Writing a quality manuscript
 - Preparations
 - Article construction
 - Language
 - Technical details
- Revisions and response to reviewers
- Ethical issues
- Conclusions: getting accepted



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Journal of Web Semantics

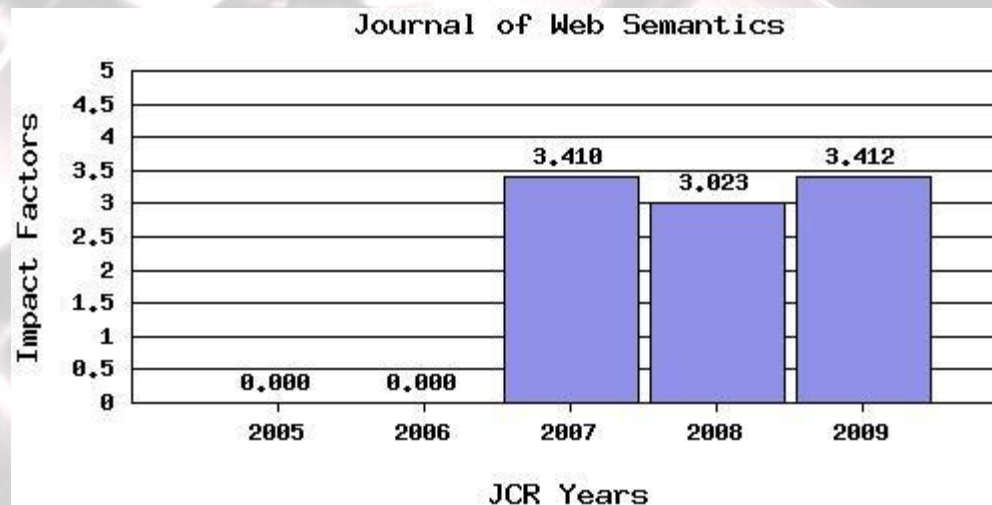




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Journal of Web Semantics

Impact Factor (IF)





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Writing a quality manuscript

- Article construction



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Article structure

- Title
 - Authors
 - Abstract
 - Keywords
- Need to be accurate and informative for effective indexing and searching
- Main text (IMRaD)
 - Introduction
 - Methods
 - Results
 - Discussion (Conclusion)
- Each has a distinct function
- Acknowledgements
 - References
 - Supplementary material



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Title

A good title should contain the **fewest** possible words that **adequately** describe the contents of a paper

DO

Convey main findings of research

Be specific

Be concise

Be complete

Attract readers

DON'T

Use unnecessary jargon

Use uncommon abbreviations

Use ambiguous terms

Use unnecessary detail

Focus on part of the content only



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Title

Slower processing is correlated with higher levels of depressed mood, fatigue, lower verbal fluency, fewer words and digits recalled and poorer recall of visual-spatial information in MS patients



Relationships between information processing, depression, fatigue and cognition in multiple sclerosis





Authors and affiliations

Be consistent with spelling, full versus short names, full versus short addresses

Surnames: Pérez-García / Pérez / García

Middle Initial: Use consistently or not at all

First Names: Dave / David

Affiliation: Faculty of Medicine / Faculty of Medical and Health Sciences



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Abstract

Types:

Indicative (descriptive) abstracts outline the topics covered in a piece of writing so the reader can decide whether or not to read on. Often used in review articles and conference reports

Informative abstracts summarize the article based on the IMRaD structure, but without section headings

Structured abstracts follow headings required by the journal. Often used in Medical journals

Check carefully which type fits the journal of your choice



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Abstract

The quality of an abstract will strongly influence the editor's decision

A good abstract:

- Is precise and honest
- Can stand alone
- Uses no technical jargon
- Is brief and specific
- Cites no references

Use the abstract to “sell” your article



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Keywords

Keywords are important for indexing: they enable your manuscript to be more easily identified and cited

Check the Guide for Authors for journal requirements

- **Keywords should be specific**
- **Avoid uncommon abbreviations and general terms**



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Keywords



Failure to replicate the association between *NRG1* and schizophrenia using Japanese large sample

Masashi Ikeda ^{a,*,1}, Nagahide Takahashi ^{b,c,1}, Shinichi Saito ^c, Branko Aleksic ^{a,c},
Yuichiro Watanabe ^d, Ayako Nunokawa ^d, Yoshio Yamanouchi ^a, Tsuyoshi Kitajima ^a,
Yoko Kinoshita ^a, Taro Kishi ^a, Kunihiro Kawashima ^a, Ryota Hashimoto ^{e,f},
Hiroshi Ujike ^g, Toshiya Inada ^h, Toshiyuki Someya ^d,
Masatoshi Takeda ^{e,f}, Norio Ozaki ^c, Nakao Iwata ^a

Keywords: Schizophrenia; Neuregulin 1; Association study; False positive; Linkage disequilibrium

Bad keywords: Psychiatric disorder, *NRG1*, LD, SNPs, Japanese large sample, association



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Introduction

Provide the necessary background information to put your work into **context**

It should be clear from the introduction:

- Why the current work was performed
 - aims
 - significance
- What has been done before
- What was done (in brief terms)
- What was achieved (in brief terms)



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Introduction

DO

- Consult the Guide for Authors for word limit
- “Set the scene”
- Outline “the problem” and hypotheses
- Ensure that the literature cited is balanced, up to date and relevant
- Define any non-standard abbreviations and jargon



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Introduction

DON'T

- Write an extensive review of the field
- Cite disproportionately your own work, work of colleagues or work that supports your findings while ignoring contradictory studies or work by competitors
- Describe methods, results or conclusions other than to outline what was done and achieved in the final paragraph
- Overuse terms like “novel” and “for the first time”



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Introduction

Essential roles of caspases and their upstream regulators in rotenone-induced apoptosis

Jihjong Lee^a, Ming-Shyan Huang^b, I-Chi Yang^c, Tsung-Ching Lai^d, Jui-Ling Wang^d, Victor Fei Pang^a, Michael Hsiao^{d,*}, Mark Y.P. Kuo^{c,e,*}

Rotenone is a naturally occurring plant compound derived from the root and bark of some Leguminosae species... Administration of rotenone has been shown to lead to biochemical, anatomical, and behavioral symptoms resembling Parkinson's disease due to neurotoxicity [1–3]. Previous studies have shown that... However, other studies contradict these findings... Understanding the exact mode of action of rotenone should provide additional useful information toward its possible application in oral cancer treatment. In this report, we...





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Methods

The Methods section must provide **sufficient information** so that a knowledgeable reader can **reproduce** the experiment

List suppliers of reagents and manufacturers of equipment, and define apparatus in familiar terms:

“using an AD 340C plate reader (Beckman Coulter)”

OR

“using a plate reader (Beckman Coulter AD 340C)”

NOT

“using a Beckman Coulter AD 340C.”

Unless the Guide for Authors states otherwise, use the past tense; the present tense is usually only used in methodology-type papers



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Results

The main findings of the research

DO

- Use figures and tables to summarize data
- Show the results of statistical analysis
- Compare “like with like”

DON'T

- Duplicate data among tables, figures and text
- Use graphics to illustrate data that can easily be summarized with text



Graphics

Figures and tables are **the most effective way to present results**

BUT:

- Captions should be able to stand alone, such that the figures and tables are understandable without the need to read the entire manuscript
- The data represented should be easy to interpret
- Colour should only be used when necessary



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Graphics

Table 2. Colour codes and notations of the soil layers

Habitat	Depth (cm)	Colour codes	Colour notation
Woodland	0-5	10YR4/2	Dark grayish brown
	5-10	2.5Y5/3	Light olive brown
	10-15	2.5Y6/3	Light yellowish brown
	15-20	2.5Y6/4	Light yellowish brown
	20-30	2.5Y6.5/3	Light yellowish brown -Light olive brown
	30-40	2.5Y5/3	Light olive brown
	40-50	2.5Y5/3	Light olive brown
	50-60	2.5Y6/3	Light yellowish brown
	60-70	2.5Y5/4	Light olive brown
	70-80	2.5Y6.5/3	Light yellowish brown -Light olive brown
	80-90	2.5Y6.5/3	Light yellowish brown -Light olive brown
Wetland	90-100	2.5Y5/3	Light olive brown
	0-5	2.5Y4/2	Dark grayish brown
	5-10	2.5Y5.5/2	Grayish brown -Dark grayish brown
	10-15	2.5Y5/2	Grayish brown
	15-20	2.5Y4/1.5	Dark gray -Dark grayish brown
	20-30	2.5Y4/2.5	Dark grayish brown -Olive brown
	30-40	2.5Y4/2.5	Dark grayish brown -Olive brown
	40-50	2.5Y4/2	Dark grayish brown
	50-60	2.5Y4/2	Dark grayish brown
	60-70	2.5Y4/2	Dark grayish brown
	70-80	2.5Y4/2	Dark grayish brown
Grassland	80-90	2.5Y4/2	Dark grayish brown
	90-100	2.5Y4/2	Dark grayish brown
	0-5	2.5Y4/2	Dark grayish brown
	5-10	5Y5/2	Olive gray
	10-15	5Y6/2	Light olive gray
	15-20	5Y6/2	Light olive gray
	20-30	5Y6/2	Light olive gray
	30-40	5Y6.5/2	Light olive gray -Olive gray
	40-50	5Y6/2	Pale olive
	50-60	5Y6/2	Pale olive
	60-70	5Y6/2	Light olive gray -Pale olive
	70-80	5Y6/2	Light olive gray -Pale olive
	80-90	5Y6/2	Pale olive
	90-100	5Y6/2	Pale olive

Illustrations should only be used to present essential data

The information in the table can be presented in one sentence:

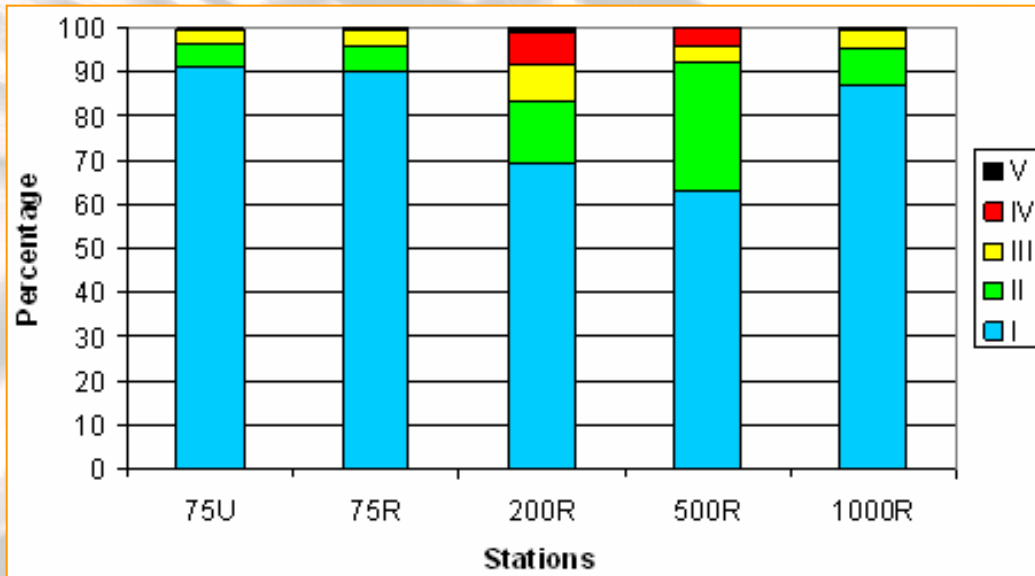
‘The surface soils were dark grayish brown, grading to light olive brown (woodland), light olive brown (wetland), and pale olive (grassland) at 100 cm.’

Summarize results in the text where possible



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Graphics



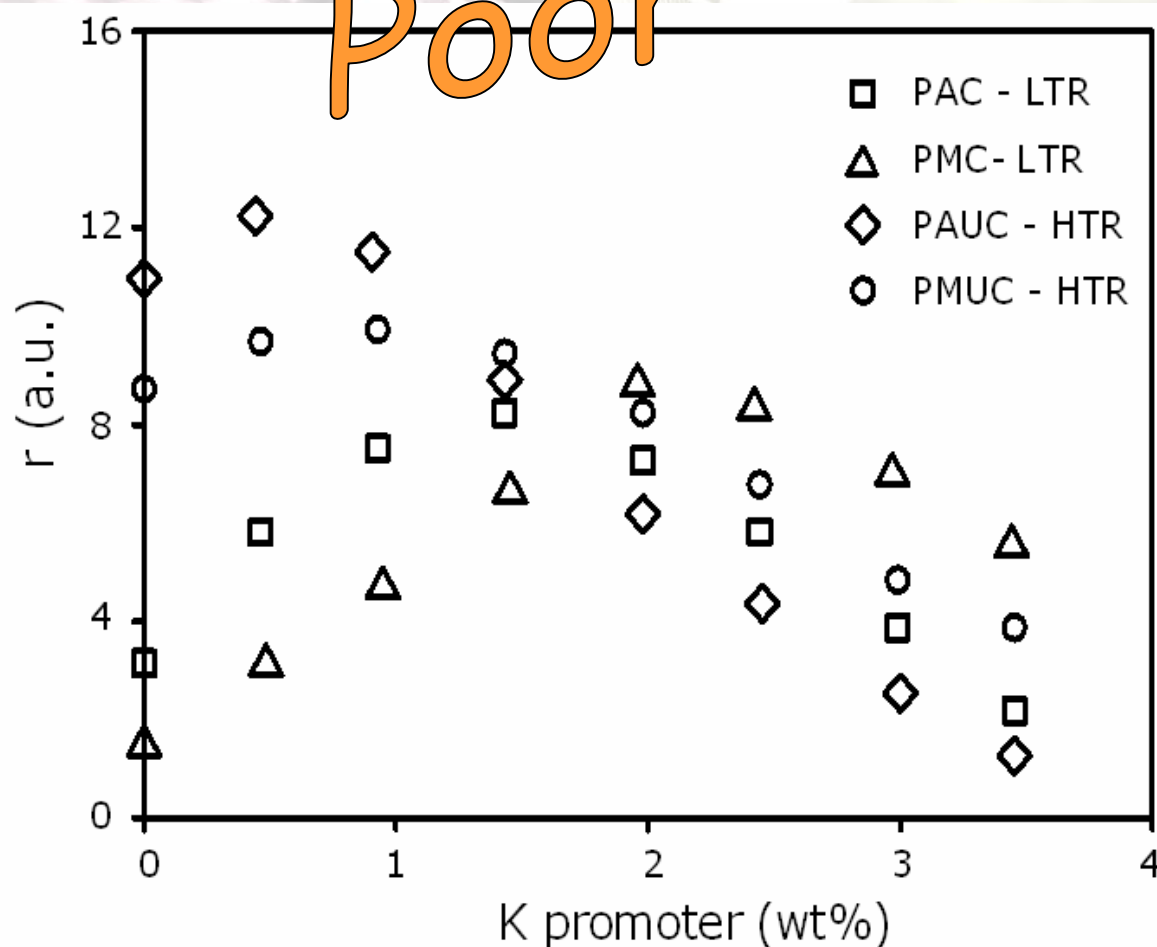
The figure and table show the same information, but the table is more direct and clear

ECOLOGICAL GROUP					
Station	I	II	III	IV	V
75U	91.3	5.3	3.2	0.2	0.0
75R	89.8	6.1	3.6	0.5	0.0
200R	69.3	14.2	8.6	6.8	1.1
500R	63.0	29.5	3.4	4.2	0.0
1000R	86.7	8.5	4.5	0.2	0.0



Graphics

Poor



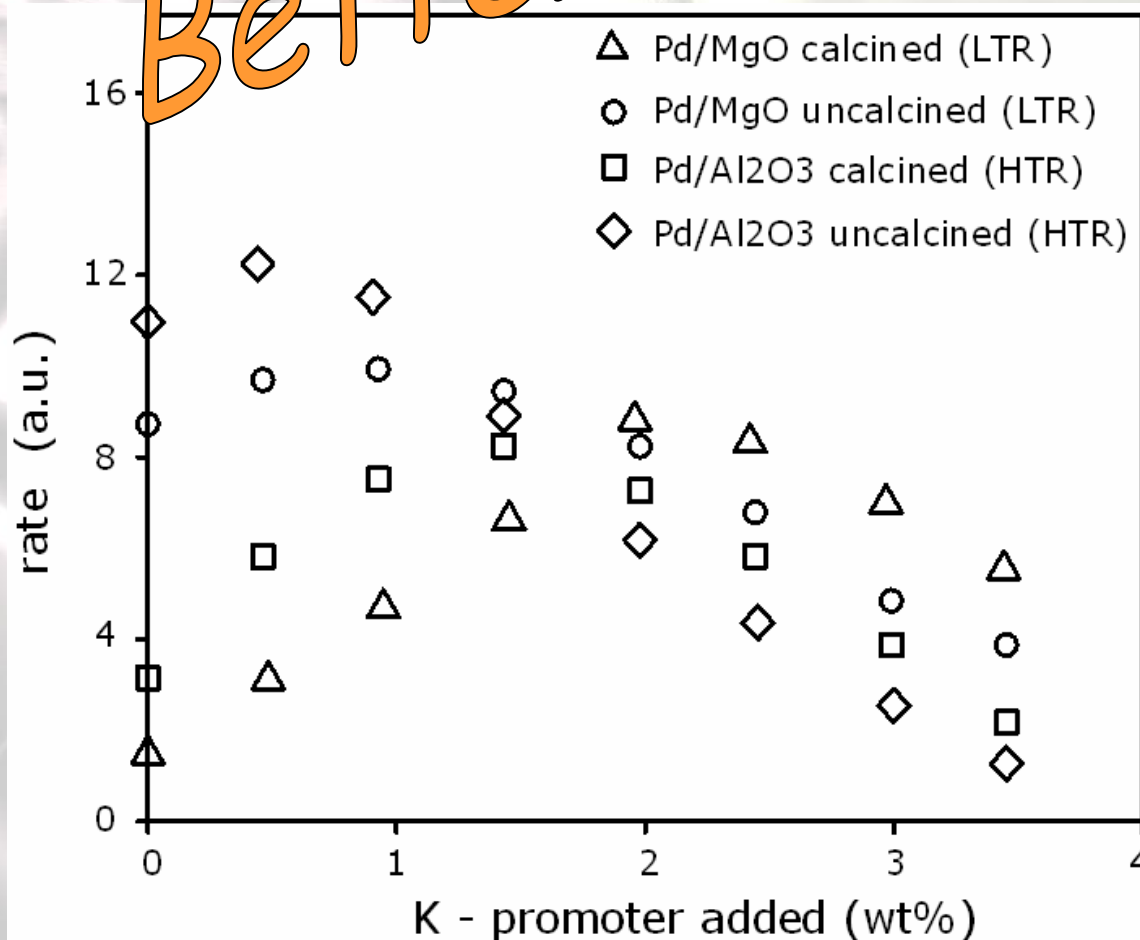
- Legend is poorly defined
- Graph contains too much data
- No trend lines



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Graphics

Better



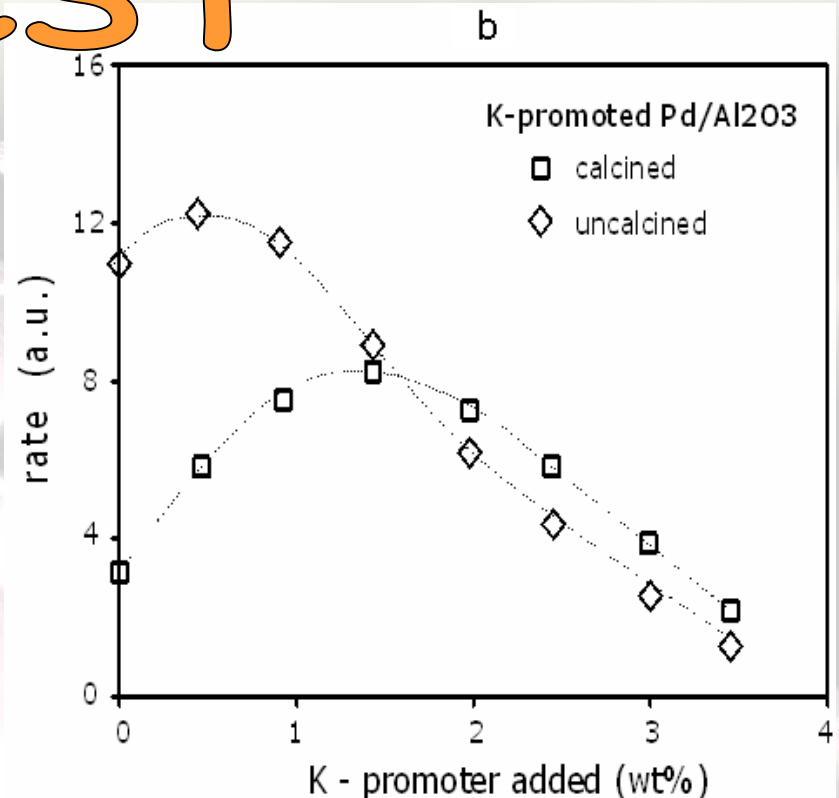
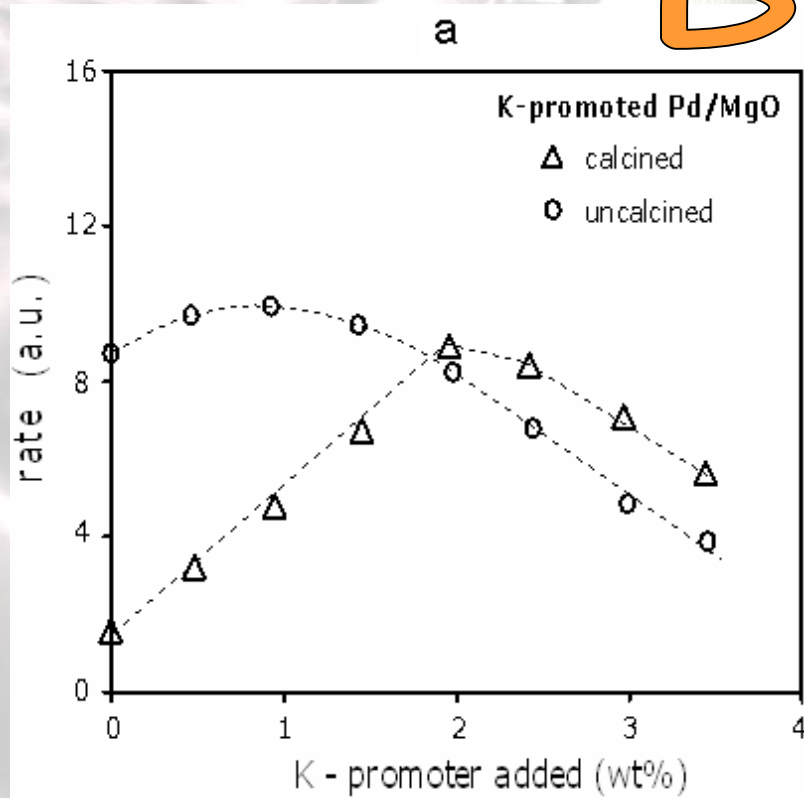
•Legend is well defined but there is still too much data and no trendlines

Graphics

Best



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- Legend is clear
- Data is better organized
- Trend lines are present



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Statistics

- Indicate the statistical tests used with all relevant parameters

mean \pm SD

- Give numerator and denominators with percentages

40% (100/250)

- Use means and standard deviations to report normally distributed data

Statistics



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- Use medians and interpercentile ranges to report skewed data
- Report P values
 $p=0.0035$ rather than $p<0.05$
- The word “significant” should only be used to describe “statistically significant differences”

Statistics



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Make your experimental findings meaningful and convincing...

- Training – testing data
- 10-fold cross-validation



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Discussion

Describe

- How the results relate to the study's aims and hypotheses
- How the findings relate to those of other studies
- All possible interpretations of your findings
- Limitations of the study

Avoid

- Making “grand statements” that are not supported by the data

Example: “This novel treatment will massively reduce the prevalence of malaria in the third world”

- Introducing new results or terms



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Discussion

Essential roles of caspases and their upstream regulators in rotenone-induced apoptosis

Jihjong Lee^a, Ming-Shyan Huang^b, I-Chi Yang^c, Tsung-Ching Lai^d, Jui-Ling Wang^d, Victor Fei Pang^a, Michael Hsiao^{d,*}, Mark Y.P. Kuo^{c,e,*}

Discussion

In the present study, rotenone treatment caused significant apoptosis in SAS cells, as demonstrated by flow cytometric detection of sub-G₁ DNA content, TUNEL labeling, DNA fragmentation, caspase-3 activation, and PARP cleavage. Shimizu et al. suggested that rotenone and other inhibitors of mitochondrial electron transport do not cause apoptosis, but induce necrotic cell death [11]. However, others have shown that cells treated with rotenone undergo apoptosis [12]. The ability of rotenone to induce apoptosis or necrosis may depend upon the cell type studied, since cellular demise by apoptotic mechanisms occurs readily in many cell types, but in other cells is more difficult to induce [13].



Conclusion

Put your study into **CONTEXT**

Describe how it represents an advance in the field

Suggest future experiments

BUT

Avoid repetition with other sections

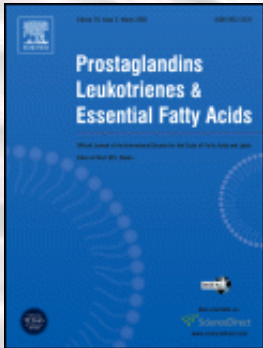
Avoid being overly speculative

Don't over-emphasize the impact of your study



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Conclusion



Influence of very long-chain n-3 fatty acids on plasma markers of inflammation in middle-aged men

Hayati M. Yusof*, Elizabeth A. Miles, Philip Calder

In summary, findings from the present study are in general accordance with previous studies that suggest.... There is a need to establish dose-dependent effects of EPA and DHA separately and in different population groups. If findings from this study are applicable to consumption of fish, then intake at the upper level of the current UK guideline range [42] may not influence cardiovascular risk factors in fairly healthy, normolipidemic and middle-aged males.



The Conclusion should put your study into CONTEXT



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Acknowledgements

Acknowledge anyone who has helped you with the study, including:

- Researchers who supplied materials or reagents, **e.g. vectors or antibodies**
- Anyone who helped with the writing or English, or offered critical comments about the content
- Anyone who provided technical help

State why people have been acknowledged and ask their permission

Acknowledge sources of funding, including any grant or reference numbers



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References

Check the Guide for Authors for the correct format

Check

- Spelling of author names
- Punctuation
- Number of authors to include before using “et al.”
- Reference style

Avoid

- Personal communications, unpublished observations and submitted manuscripts not yet accepted
- Citing articles published only in the local language
- Excessive self-citation and journal self-citation

References

Check the style and format as required – it is not the editor's job to do so for you

Harvard System (alphabetical by author/date):

Berridge, MJ 1998, Neuronal calcium signaling, *Neuron* vol. 21: pp. 13-26

APA (American Psychological Association) System (alphabetical)

Berridge, M.J. (1998). Neuronal calcium signaling. *Neuron* 21, 13-26

Vancouver System (numbered in order or citation)

1. Berridge MJ. Neuronal calcium signaling. *Neuron*. 1998;21:13-26

There are a number of other systems in use and variations for all systems



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Supplementary material

**Information related to and supportive of the main text,
but of secondary importance**

Includes:

- Microarray data
- Sequence data
- Method validation
- Additional controls
- Video data

Will be available online when the manuscript is published



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Writing a quality manuscript

- Language



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“Journal editors, overloaded with quality manuscripts, may make decisions on manuscripts based on formal criteria, like grammar or spelling. Don't get rejected for avoidable mistakes; make sure your manuscript looks perfect”

Arnout Jacobs, Elsevier Publishing

Thus, both the science and the language need to be sound

The three “C”s (C³) principle



Good writing possesses the following three “C”s:

- **Clarity**
- **Conciseness**
- **Correctness (accuracy)**

The key is to be as brief and specific as possible without omitting essential details

Best advice on style



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“Perfection is achieved, not when there is nothing more to add, but when there is nothing left to take away “

Antoine de Saint-Exupéry



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Know the enemy

Good writing avoids the following traps:

- **Repetition**
- **Redundancy**
- **Ambiguity**
- **Exaggeration**

These are common annoyances for editors



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Repetition and redundancy

Vary the sentences used when writing the abstract or describing findings at the end of the introduction

Don't copy from other sections verbatim!

Avoid words with the same meaning

In addition, sections were also stained with ...

After centrifugation, pellets were then...



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Repetition and redundancy

Avoid circular sentences

In order to examine differences in protein levels, lysates were subjected to 10% SDS-PAGE and Western blotting using an anti-NR1 antibody, to observe the effects of stimulation on receptor trafficking.

The reason for the experiment is described twice, in slightly different terms



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Ambiguity

Ensure correct use of “which”, commas and hyphens

In “Data were normalised to the internal reference housekeeping gene actin, which showed...”



The “which” is used incorrectly, referring to actin rather than to the normalisation of data

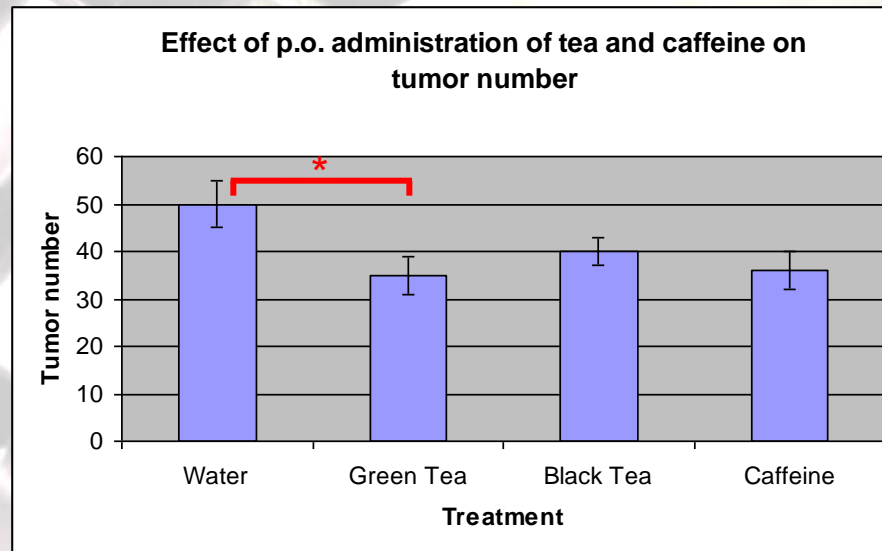
“Data were normalised to the internal reference housekeeping gene actin, revealing that...” **is correct**





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Exaggeration



*“There was a **massive** decrease in the number of tumors following p.o. administration of green tea”*

Beware of **exaggeration** but do indicate **significance**



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Other common traps

Inconsistent tense – don't mix tenses in the same sentence

Before tumors **were** microdissected, epithelial cells **are**...

Inconsistent use of plural or singular

In eight **patients**, a **biopsy** from the affected sites of the head and neck **was** performed



In eight **patients**, **biopsies** from the affected sites of the head and neck **were** performed





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Other common traps

Unbalanced sentences – make sure the clauses either side of “compared with” match up

Expression levels of p53 in smokers were compared with non-smokers...



Expression levels of p53 in smokers were compared with **those in** non-smokers...





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Other common traps

Incorrect use of respectively – two corresponding lists are required

The proportions of various monocyte surface markers were 45%, 63% and 70%, respectively



The proportions of monocytes positive for CD163, CD7 and CD11a were 45%, 63% and 70%, respectively





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Other common traps

Incorrect use of etc. / and so on

“The two groups of data were compared using a variety of statistical methods including a t-test, chi squared analysis, etc.”

It is important here to define the tests used as they are particular to the paper, not part of a natural series and not obvious to the reader

Language Editing Services

Your manuscript is precious, invest in it

- Specialist scientific and medical editing services are commercially available to polish the language in your manuscript prior to journal submission
- Rates start from \$8 per page

More information can be found on the Elsevier website at:
<http://www.elsevier.com/wps/find/authorsview.authors/languagepolishing>



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Language Editing Services

Recommended companies include:

- Edanz Editing
- Liwen Bianji
- International Science Editing
- Asia Science Editing
- SPI Publisher Services
- Diacritech Language Editing Service

Use of an English-language editing service listed here is not mandatory, and will not guarantee acceptance for publication in Elsevier journals

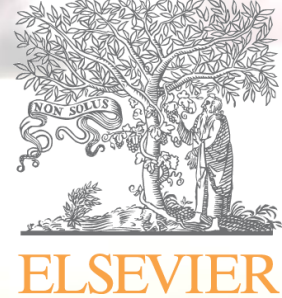


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Writing a quality manuscript

- Technical details

Layout



- Keep line spacing, font and font size consistent throughout
 - double-spaced 12-point Times New Roman is preferred
- Use consistent heading styles throughout and no more than three levels of heading
- Number the pages
- Number lines if journal requires – check the Guide for Authors
- Order and title sections as instructed in the Guide for Authors – Figure and Table sections are normally together following References

Length

“...25-30 pages is the ideal length for a submitted manuscript, including ESSENTIAL data only”

Julian Eastoe, Co-editor, *Journal of Colloid and Interface Science*

Consult the Guide for Authors for word and graphic limits

Letters or short communications have stricter limits on the length. For example, 3000 words with no more than five illustrations.



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Abbreviations

- Define non-standard abbreviations on first use in both the abstract and the main text
- Check the Guide for Authors for a list of standard abbreviations that don't need defining
- Don't abbreviate terms used only once or twice in the entire manuscript – spell these out in full
- Acronyms: capitals not required in the definition unless a proper noun or start of a sentence

ubiquitin proteasome system (UPS)

NOT

Ubiquitin Proteasome System (UPS)



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Cover letter

- This is your chance to speak to the editor directly
- Keep it brief, but convey the particular importance of your manuscript to the journal
- Suggest potential reviewers

This is your opportunity to convince the journal editor that they should publish your study, so it is worth investing time at this stage



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Revisions and Response to Reviewers



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Final checks

Revision before submission can prevent early rejection

What can I do to ensure my paper is in the best possible state prior to submission?

- Ask colleagues to take a look and be critical
- Check that everything meets the requirements set out in the Guide for Authors – again!
- Check that the scope of the paper is appropriate for the selected journal – change journal rather than submit inappropriately



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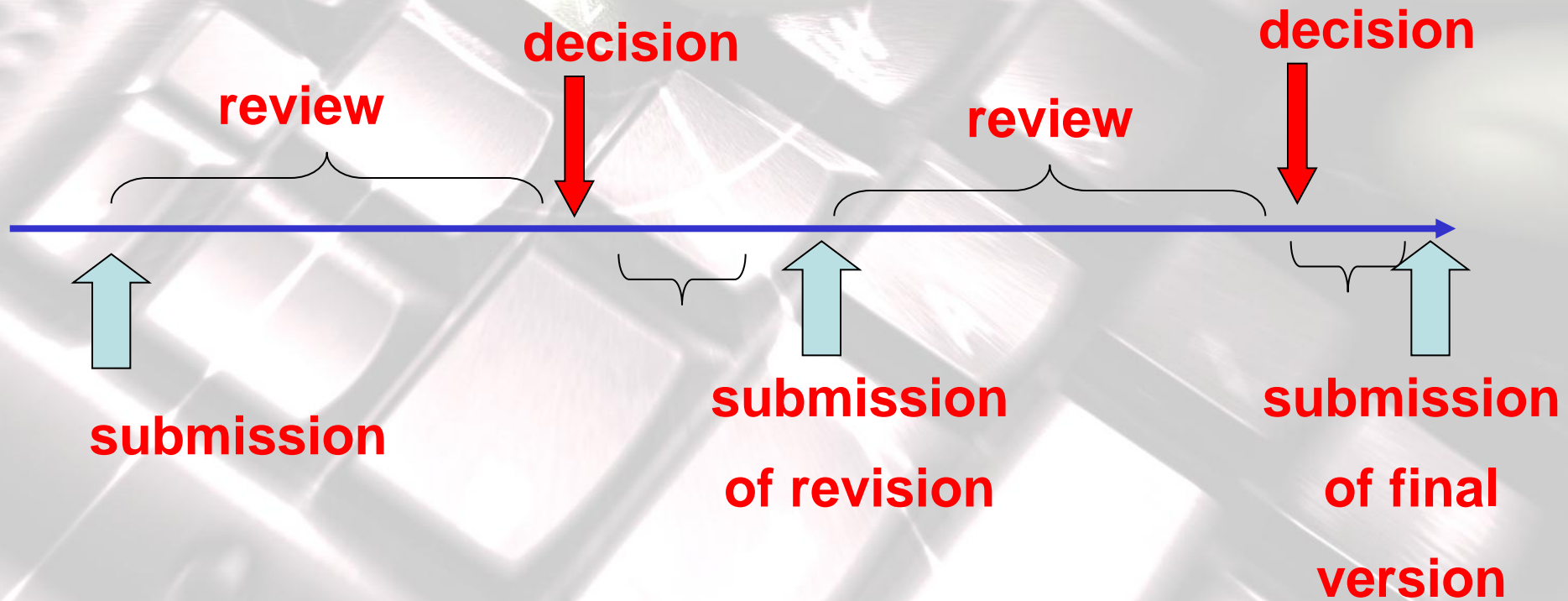
Final checks

Revision before submission can prevent early rejection

What can I do to ensure my paper is in the best possible state prior to submission?

- If necessary, get a colleague or approved editing service to improve the language and ensure that the manuscript possesses the three “C”s
- Ensure that the literature cited is balanced and that the aims and purpose of the study, and the significance of the results, are clear
- Use a spellchecker

Manuscript submission: milestones





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Post-referee revision

Carefully study the reviewers' comments and prepare a detailed letter of response

- Respond to all points; even if you disagree with a reviewer, provide a polite, scientifically solid rebuttal rather than ignore their comment
- Provide page and line numbers when referring to revisions made in the manuscript
- Perform additional calculations, computations, or experiments if required; these usually serve to make the final paper stronger

Post-referee revision



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The reviewer is clearly ignorant of the work of Bonifaci et al. (2008) showing that the electric field strength in the ionization zone of the burned corona is less than the space charge free field before the corona onset....



Thank you for your comment. However, we feel that the assumption in our model is supported by recent work by Bonifaci et al. (2008), who showed that the electric field strength in the ionization zone of the burned corona is less than the space charge free field before the corona onset





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Post-referee revision

- State specifically what changes you have made to address the reviewers' comments, mentioning the page and line numbers where changes have been made
- Avoid repeating the same response over and over; if a similar comment is made by multiple people explain your position once and refer back to your earlier response in responses to other reviewers or the editor



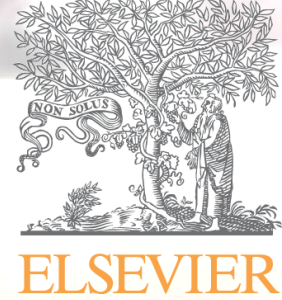
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Accepting rejection

Don't take it personally!

- Try to understand why the paper has been rejected
- Evaluate honestly – will your paper meet the journal's requirements with the addition of more data or is another journal more appropriate?
- Don't resubmit elsewhere without significant revisions addressing the reasons for rejection and checking the new Guide for Authors

Accepting rejection



- **Suggested strategy for submitting elsewhere:**
 - In your cover letter, declare that the paper was rejected and name the journal
 - Include the referees' reports and show how each comment has been addressed
 - Explain why you are submitting the paper to this journal; is it a more appropriate journal?



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Ethical Issues



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Unethical behavior includes:

- Multiple submissions
- Redundant publications
- Plagiarism
- Data fabrication and falsification
- Improper use of human subjects and animals in research
- Improper author contribution



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Multiple submissions

Multiple submissions save your time but **waste editors'**

The editorial process of your manuscripts will **be completely stopped** if the duplicated submissions are discovered



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Multiple submissions

Competing journals constantly exchange information on suspicious papers

You should not send your manuscripts to a second journal **UNTIL** you receive the **final decision from the first journal**

DON'T DO IT!!



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Redundant publication

An author should not submit for consideration in another journal a previously published paper

- Published studies **do not need to be repeated** unless further confirmation is required
- Previous publication of an abstract during the proceedings of conferences does not preclude subsequent submission for publication, but **full disclosure** should be made at the time of submission

Redundant publication

- Re-publication of a paper in another language is acceptable, provided that there is **full and prominent disclosure of its original source** at the time of submission
- At the time of submission, authors should disclose details of related papers, even if in a different language, and similar papers *in press*

Plagiarism



“Plagiarism is the appropriation of another person’s ideas, processes, results, or words without giving appropriate credit, including those obtained through confidential review of others’ research proposals and manuscripts”

**Federal Office of Science and Technology Policy,
1999**



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Plagiarism

Plagiarism is a serious offence that could lead to paper rejection, academic charges and termination of employment. It will seriously affect your scientific reputation

DON'T DO IT!

Unacceptable paraphrasing, even with correct citation, is considered plagiarism



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Data fabrication and falsification

- Fabrication is making up data or results, and recording or reporting them
- Falsification is manipulating research materials, equipment, processes; or changing / omitting data or results such that the research is not accurately represented in the research record

“The most dangerous of all falsehoods is a slightly distorted truth”

G.C. Lichtenberg (1742–1799)



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Unethical research

- Experiments on human subjects or animals should follow related ethical standards, namely, the Helsinki Declaration of 1975, as revised in 2000 (5)
- If doubt exists concerning the compliance of the research with the Helsinki Declaration, authors must explain the rationale for their approach and demonstrate approval from the institutional review body



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Improper author contribution

Authorship credit should be based on

1. Substantial contributions to conception and design, or acquisition of data, or analysis and interpretation of data
2. Drafting the article or revising it critically for important intellectual content
3. Final approval of the version to be published

Authors should meet conditions 1, 2, and 3. Those who have participated in certain substantive aspects of the research project should be acknowledged or listed as contributors. Check the Guide for Authors and ICMJE guidelines: <http://www.icmje.org/>



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Conclusion: Getting Accepted



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What gets you accepted?

Attention to details

Check and double check your work

Consider the reviews

English must be as good as possible

Presentation is important

Take your time with revision

Acknowledge those who have helped you

New, original and previously unpublished

Critically evaluate your own manuscript

Ethical rules must be obeyed

– Nigel John Cook, Editor-in-Chief, *Ore Geology Reviews*